NOTES ON ALAPTUS PSOCIDIVORUS GAHAN A NEW SPECIES OF MYMARIDÆ (HYMENOPTERA)

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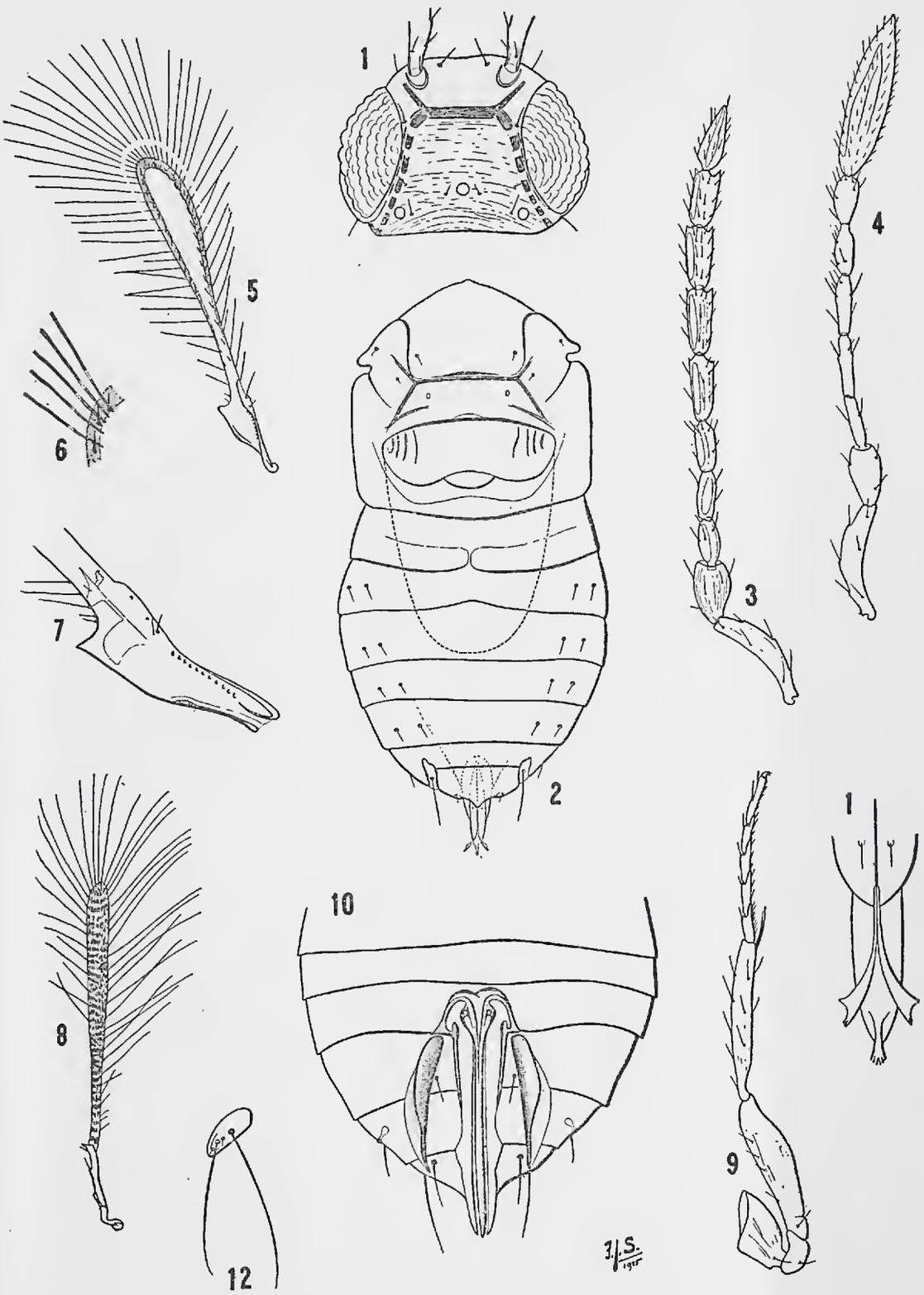
The first time adults of this genus came to my attention was on February 20, 1923. Egg clusters of the host, *Peripsocus californicus,* Banks, were kept under observation at the time.

Although sufficient adults of *Alaptus psocidivorus* could be procured for observation in the laboratory, difficulty was experienced in keeping them alive for any length of time and in handling these fragile little wasps. Over night a whole brood would die off, due either to excessive heat in the laboratory or to lack of moisture. Individuals could be found lapping up the moisture from the walls of the phials in which they were kept.

The adults are a little less than 0.5 mm. in length and are pale brown in color. When alive the minute creatures are barely detectable with the unaided eye, and when on the wing they can easily be mistaken for dust particles soaring in the light.

The normal development of the Psocid eggs was found to be from eight to twelve days. Two days before issuing a very distinct egg tooth became apparent. (Wachter, Pan.-Pac. Ent., Vol. II, No. 2, 1925.) The development of parasitized eggs, on the contrary, took twenty-six days for completion, while eighteen days after being parasitized two large characteristic red eye spots would appear. In some cases the parasitized eggs in the later stage of development took on a dark steel-blue color. This very likely can be ascribed to the fact that the Alaptus pupa case became visible through the egg chorion, which, in this particular instance, was almost transparent. In other cases where the chorion of the normal Psocid eggs was somewhat milky in color it remained unchanged after being parasitized or even became more dense and opaque.

The first sign observed of the issuing Alaptus was the appearance of a wet spot. The softened egg shell was pushed from within, and thus a hole was produced. The insect seemed to dissolve the egg shell rather than to chew its way out, although it possesses a strong pair of mandibles. After the parasite left



1, head of *Alaptus psocidivorus*; 2, male thorax and abdomen showing propodeum and phragma; 3, male antenna; 4, female antenna; 5, left fore wing (drawn to smaller scale); 6, enlarged section of posterior margin of fore wing showing marginal cilia and single row of discal cilia; 7, wing base of No. 5 enlarged; 8, right hind wing; 9, hind leg; 10, ovipositor in situ (ventral view); 11, male genitalia; 12, abdominal plate.

the egg, a uniform round hole was found in one end, while the egg shell remained milky or dark steel color. Normally hatched Psocus eggs, on the other hand, are split open with the assistance of an egg burster, and the empty shells are either milky or transparent.

Different broods of both sexes were confined, but no mating was observed. Great difficulty was experienced by the female in reaching the egg, due to the thickness of the protecting covering of the Psocus egg cluster. The eggs were constantly missed and she did not seem to be able to locate them properly. In an effort to reach the egg with the ovipositor the normal shape of the abdomen became distorted into a square. For a long time her efforts remained without success and actual oviposition was not observed until late in the evening, when a less densely covered egg mass was located and the position of the subject was such that the proceedings could be followed accurately. The ovipositor was not inserted at any particular portion of the egg. After having tried different places a hole was drilled, and with an up and down pumping motion the egg was set off. The time average for oviposition was found to be one minute and twenty-five seconds, while the intermissions varied from thirty to forty-five seconds. After an egg was deposited the ovipositor was slowly pulled back and in some cases much time was consumed in locating the next egg to be attacked. The female walked around as if searching, piercing already parasitized eggs. She seemed to be making sure of having done a thorough piece of work, or perhaps to be in search of food from the egg contents, although its source was in each case out of reach.

Since the identity of the Psocids was not accurately checked, it is probable that more than one species of Psocidæ serves as hosts to *Alaptus psocidivorus*. In addition, among the collected material three specimens of *Alaptus cæcilii,* Girault, were found, thus indicating that *psocidivorus* is not necessarily the specific egg parasite of *Peripsocus californicus*.